THERAPEUTICS

UNDER THE CHARGE OF

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Etiology of an Outbreak of Infectious Diarrhea.—Weiss (*Arch. Int. Med.*, 1921, xxviii, 37) states that out of 422 cases of diarrhea occurring in the autumn of 1918 in the A. E. F. at the St. Anne Barracks, Nantes, only 15 required hospital care. Eight of these were available for study and from 7 a Gram-positive micrococcus was isolated from one or more sources—in 4 cases from the feces, in 6 cases from the urine and in 1 case from the blood. The eighth case, the only negative one, was convalescent. The author describes the organism carefully and shows the identical manner in which the various strains react on fermentation mediums and with serum agglutination tests. He was able, also, to produce diarrhea in Macacus rhesus monkeys by feeding them the organism, and in a number of these cases the disease proved fatal and the organism was recovered at postmortem. A monkey actively immunized by a polyvalent vaccine made from these cultures was subsequently resistant to infection. The author concludes that the evidence presented suggests the etiological relationship of the organism described to infectious diarrhea in the outbreak studied.

Modern Methods in Handling Hospital Statistics.—Pearl (*Bull. Johns Hopkins Hosp.*, 1921, xxxii, 184) shows the value of and need for careful statistical investigation of medical data in a modern hospital. He gives the functions of a statistical department: (*a*) Assembling and tabulating routine statistical data; (*b*) organization of special department records; (*c*) consultant service (of expert statistician to persons publishing papers); (*d*) research (special biometrical investigations). He discusses the hospital records and points out the commonest defects: "The advantages of this method of preserving histories (the so-called 'unit system' of case histories) over the far more common system of binding them in great volumes in numerical or temporal sequence are so obvious as not to need detailed exposition. Such a method is really essential." The modern system of mechanical tabulating and indexing is described whereby records are transferred, by means of a machine called a "key punch," to cards, the record on the card appearing as a series of punch holes. Then by means of another machine, known as a "sorter," the punched cards can be mechanically sorted at a rate of 250 cards per minute into any desired arrangement. The pertinent cards thus sorted need only be run again through another machine, known as a "tabulator" and the results relative to any desired category of information will be mechanically counted and tabulated. The organization of the card forms is shown and fac-similes are produced of (*a*) the primary card, (*b*) the secondary card, and of (*c*) five special cards (now in use in the Brady Urological Clinic of the Johns Hopkins Hospital). The statistical department in a modern hospital should consist of a chief statistician, an assistant statistician and four clerks. He details the material equipment needed.

The Intravenous Administration of Calcium Acetyl Salicylate.—CAMPBELL (*British Med. Jour.*, July 9, 1921, p. 37) states that acetyl salicylic acid is in part decomposed into salicylic acid and absorbed as salicylate—that part is taken into the blood stream unchanged. The salicylate formed from it exercises its usual antipyretic action on the tissues. The undecomposed molecule is responsible for the analgesic action in headache, neuralgia, etc. It occurred to Campbell that the analgesic action could be greatly increased if the drug were injected directly into the blood stream, thus avoiding decomposition in the alimentary tract. Since acetyl salicylic acid is only slightly soluble, calcium acetyl salicylate was used. The results more than fulfilled expectations; the pain is relieved in one-half to three-quarters of an hour and the effect persists for several hours and in some cases for days. Among the painful conditions that yielded to this new therapy were sciatica, acute rheumatism, tabes dorsalis, interstitial keratitis, acute iritis, arsenical neuritis, dysmenórrhea, etc. It is noteworthy that one patient who was unable to take sodium salicylate or acetyl salicylic acid by mouth was promptly relieved by calcium acetyl salicylate by vein.

The Salicylates. XIII. The Liberation of Free Salicylic Acid from Salicylate in the Circulation.—It has been claimed that the absence of a right-sided valvular endocarditis is due to the antiseptic qualities of free salicylic acid liberated in the right heart by virtue of the greater carbon dioxide content of the venous blood; that the occurrence of initial endocarditis is associated with the greater alkalinity of the arterial blood, which cannot liberate free salicylic acid and consequently does not possess antiseptic qualities. Although HANZLIK (*Jour. Pharm. Exp. Therap.*, 1921, xvii, 385) admits that this view is not compatible with the modern conceptions of the mechanism of neutrality regulation of the blood, he thought it desirable to put it to a test. Animals were injected with salicylate and were subjected to the most favorable conditions for reduction of the alkalinity of the blood, mainly by means of fatal asphyxia. But first it was necessary to determine the degree of acidity necessary for the liberation of free salicylic acid from salicylate *in vitro*. It was found that free salicylic acid is demonstrably liberated from the sodium salt at a low degree of acidity, one whose hydrogen-ion concentration corresponds to $pH=6.7$; more definitely at $pH=6.5$. The presence of 25 per cent serum or plasma in salicylate "buffer" mixtures prevents the liberation of free salicylic acid at the high degree of acidity of $pH=5.9$. Therefore it is improbable that free salicylic acid could be demonstrated in the circulation during life. This was fully confirmed on animals subjected to fatal asphyxia whose cardiac and arterial bloods were rendered very slightly acid ($pH=6.8$ or 6.9). Consequently the theory that free